

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application.

Listing of Claims:

1. (Currently Amended) A method for determining whether the activity range of a test compound, which modulates the uptake of serotonin by a serotonin reuptake transporter (SERT), has an effect on against a secondary target ~~that is not a serotonin reuptake transporter (SERT),~~ said method comprising the steps of:

(a) contacting a *Caenorhabditis elegans* nematode lacking a wild-type SERT polypeptide and expressing a mutated *Caenorhabditis elegans* SERT (CeSERT) polypeptide selected from the group consisting of a CeSERT(n822) polypeptide, a CeSERT(n823) polypeptide, and a CeSERT(n3314) polypeptide with said compound, wherein said mutated CeSERT polypeptide has a reduced capacity to take up serotonin relative to wild-type; and

(b) analyzing said nematode for an effect of said contacting on a defined behavior by said nematode, wherein a difference in said defined behavior by said nematode, relative to said defined behavior by a *Caenorhabditis elegans* nematode expressing a mutated CeSERT polypeptide but not contacted with said compound, indicates said compound has an effect on a secondary target.

2. (Currently Amended) The method of claim 1, wherein steps (a) and (b) are repeated using a *Caenorhabditis elegans* nematode selected from at least two *Caenorhabditis elegans* nematodes expressing a mutated CeSERT polypeptide selected from the group consisting of a

CeSERT(n822) polypeptide, a CeSERT(n823) polypeptide, and a CeSERT(n3314) polypeptide,
wherein said mutated CeSERT polypeptide differs from said mutated CeSERT polypeptide of
step (a).

3. (Previously Presented) The method of claim 1, wherein said mutated CeSERT
polypeptide is a complete loss-of-function.

4. (Previously Presented) The method of claim 1, wherein said method comprises a
liquid locomotion assay.

5. (Previously Presented) The method of claim 1, wherein said defined behavior is
movement, pharyngeal pumping, egg-laying, nose contraction, or defecation.

6. (Cancelled)

7. (Previously Presented) The method of claim 1, wherein said compound is from a class
of compounds selected from the group consisting of antidepressants, migraine medications, and
anti-emetics.

8. (Original) The method of claim 7, wherein said antidepressant is a selective serotonin
reuptake inhibitor.

9. (Original) The method of claim 7, wherein said antidepressant is a tricyclic antidepressant.

10. (Original) The method of claim 7, wherein said antidepressant is a monoamine oxidase inhibitor.

11. (Previously Presented) The method of claim 1, wherein said test compound is administered at more than one concentration.

12. (Currently Amended) A method for identifying a test compound capable of modulating the uptake of serotonin by a serotonin reuptake transporter (SERT), wherein said test compound modulates the activity of a secondary target ~~that is not a SERT~~, said method comprising the steps of:

(a) contacting a *Caenorhabditis elegans* nematode lacking a wild-type SERT polypeptide and expressing a mutated *Caenorhabditis elegans* SERT (CeSERT) polypeptide selected from the group consisting of a CeSERT(n822) polypeptide, a CeSERT(n823) polypeptide, and a CeSERT(n3314) polypeptide with said compound, wherein said mutated CeSERT has a reduced capacity to take up serotonin relative to wild-type; and

(b) analyzing said nematode for an effect of said contacting on a defined behavior by said nematode, wherein a difference in said defined behavior by said nematode, relative to said defined behavior by a *Caenorhabditis elegans* nematode expressing a mutated CeSERT polypeptide selected from the group consisting of a CeSERT(n822) polypeptide, a

CeSERT(n823) polypeptide, and a CeSERT(n3314) polypeptide but not contacted with said compound, indicates said compound is capable of modulating the uptake of serotonin by a SERT by modulating the activity of a second target.

13. (Currently Amended) The method of claim 12, wherein steps (a) and (b) are repeated using a Caenorhabditis elegans nematode selected from at least two Caenorhabditis elegans nematodes expressing a mutated CeSERT polypeptide selected from the group consisting of a CeSERT(n822) polypeptide, a CeSERT(n823) polypeptide, and a CeSERT(n3314) polypeptide, wherein said mutated CeSERT polypeptide differs from said mutated CeSERT polypeptide of step (a).

14. (Previously Presented) The method of claim 12, wherein said mutated CeSERT polypeptide is a complete loss-of-function.

15. (Previously Presented) The method of claim 12, wherein said method comprises a liquid locomotion assay.

16. (Previously Presented) The method of claim 12, wherein said defined behavior is movement, pharyngeal pumping, egg-laying, nose contraction, or defecation.

17. (Cancelled)

18. (Previously Presented) The method of claim 12, wherein said compound is from a class of compounds selected from the group consisting of antidepressants, migraine medications, and anti-emetics.

19. (Previously Presented) The method of claim 18, wherein said antidepressant is a selective serotonin reuptake inhibitor.

20. (Previously Presented) The method of claim 18, wherein said antidepressant is a tricyclic antidepressant.

21. (Previously Presented) The method of claim 18, wherein said antidepressant is a monoamine oxidase inhibitor.

22. (Previously Presented) The method of claim 12, wherein said test compound is administered at more than one concentration.